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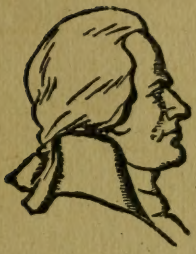
[Modern business Talks-]

DEVELOPING PRODUCTIVE POWER



MODERN BUSINESS
TALK No. 8

ALEXANDER HAMILTON INSTITUTE
NEW YORK

Developing Productive Power

Number Eight of a Series of Modern Business Talks Prepared by the Alexander Hamilton Institute

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NEW YORK

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READING ASSIGNMENT
NUMBER EIGHT

"The three principal factors conditioning the output of both men and machines are speed, the character of the material and the tools."—Page 214, Chapter XVI, Volume 4 of the MODERN BUSINESS Text.

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(1) Read this Talk on "Developing Productive Power." Everywhere—in factory, store and office—a vast amount of time and money is wasted thru ill-directed efforts. This Talk points out some of the means whereby such waste may be prevented.

(2) Read Chapters XIV-XXV (pages 188 to 350 inclusive) of "Factory and Office Administration," which is the fourth volume of the MODERN BUSINESS Text.

(3) Study the situation described in Problem 4 and send in your solution for criticism.

The business world is always looking for men who, in addition to being masters of their own jobs, can direct the work of others. Ability to do the right thing in the right way and at the right time is a sure passport to larger opportunities with their accompaniment of greater responsibilities and large income.

"What is really momentous and all-important with us is the present by which the future is shaped and colored."

—W. T. OSBORN.

Developing Productive Power

"The standardizing of a product, a tool, a process or a relation depends upon the removal of as many as possible of the variable or uncertain factors."—
Page 216, Chapter XVI, Volume 4 of the MODERN BUSINESS Text.

Today a comparatively young man is driving around the streets of New York City in an expensive automobile who owes his present affluence to the fact that he learned a few things about efficient management just a little before his competitors learned them.

Back in 1903, the New York State Legislature passed a Tenement House Law, one of the important features of which was that sanitary toilet accommodations be provided for each floor in all tenement houses. To instal these accommodations, the house-owners usually took out the passage wall between two apartments, erected a compartment with a vestibule in order to give both families sufficient access, and cut a window thru the brick wall to the outer air.

In this work, quality did not count for much. The owner of the building was satisfied if the job passed the city inspection, and the contractor took care of

that feature by agreeing to wait for his final payment until the inspector's approval had been obtained. Competition among the contractors was, therefore, solely one of price, and this competition was keen. The bids of contractors who were satisfied with earning a small percentage on the invested capital came very close to the actual cost of the job as done by the cheap and rather inefficient labor that was used for this work.

The labor supply, moreover, was always shifting. When a contractor was busy, he generally picked up the first man he could lay his hands on. When work was slack, he had to lay off even some of his better-grade men. So the contractor was continually taking on and laying off men.

Seeing an Opportunity

When the young man of whom we are speaking entered this rather unpromising field, he did it with the settled conviction that if he could get enough of this work to keep a gang of men constantly employed, he could, by means of specialization and standardization, greatly reduce the cost of each job.

He succeeded in closing a contract with a large meat packing concern which owned about fifty tenements. This contract was taken at a price lower than any of his keenest competitors was willing to quote. The only stipulation he made was that he should not be required to complete more than twenty-five houses in one year, tho all were to be finished before the expiration of the second year.

With this contract as a foundation and guaranty of the permanency of his organization, the contractor threw himself immediately into competition with other contractors in that field—and solely on a price basis.

Specializing and Standardizing

Meanwhile, he had set to work standardizing each operation on this job, seeking to make one man (sometimes two or three) particularly skilful at each operation thus standardized. This is how he divided the work.

First he sent a man up thru the house tearing off the plaster from the wall to be removed. Following closely on the heels of the first man was another with a saw and ladder, who cut off the joists at the floor and ceiling and removed the studding and lath in one piece. After him came a man whose work was to cut out the floors and cut off the floor beams. With him was another man who shored up these floor beams from the floor below and rehung them with a new header and wrought-iron hangers. By the time these men had reached the second or third floor, plumbers were busy working up from the cellar hanging the necessary drainage pipes. Next came two carpenters who erected the studding for the new partitions and put the lath on them.

Closely on the heels of the carpenters came a man who set the slate floor in each compartment. Right behind him again came two men of whom the first cut out the brick work in the outer wall and the

second inserted a cast-iron window box which the contractor himself had invented. This box acted both as a window frame and as a support for the brick wall.

Then came a man who set the fixtures and two plasterers who plastered the new partitions. As soon as the plaster was dry, two men came along who added the trim and hung the doors—and the work was finished.

He who properly adjusts and correlates the various parts of an operation is rendering constructive service of a high order.

Stimulation

Under this arrangement each man had his particular job to do, and he had to finish it before the man behind him began treading on his heels. The number of men required for each operation was so nicely figured that each man, or pair of men, moved along about as fast as those before and those behind. Each man knew that if he slackened, he would delay the work behind him. There was no chance whatever to "soldier." Very soon it was noticed that each man took pleasure in catching up with the man in front and in distancing the man behind. The same men always worked together. There was an admirable spirit of friendly rivalry. The men took pride in their work and the boss always spoke an appreciative word about their excellent team work.

With one gang thus fairly well trained, the contractor promptly organized another, and from an effort to stimulate friendly rivalry among members of the same gang, he now set out to develop such rivalry between the gangs as such. At the beginning of each month he offered a prize to the gang which, during that month, should finish a five-story house in the shortest time.

And now that he had two gangs going, the contractor started a third, and later even a fourth gang. He continued to foster the keenest of friendly rivalry among the men. Presently he had with each gang a working foreman, while he himself moved about among the different jobs on his motorcycle. Each morning, before starting on his rounds, the contractor received from his stenographer a number of carbon copies of a tabulated statement showing where each gang was working, at what time the work had been started, and to what point it had progressed. These copies were distributed among the workmen. Its effect upon the men was noticeable. Not a single moment was wasted. Each gang coveted that prize, and all had precisely the same chance of winning it.

The rate of wages paid to these men was exactly the same as that paid by other contractors doing the same kind of work. The advantage he offered was permanency of employment—a decided advantage. Without it his success would hardly have been possible.

But the chief cause of his success undoubtedly lay

in his ability to standardize each part of every job, and in the skill with which he induced each worker to do his best.

The Success Viewpoint

How simple all this seems when told! Yet how different was the atmosphere in this contracting organization from that usually found in similar concerns. How different was this man's attitude toward labor, compared with that of the ordinary small employer of men.

He is still in the contracting business in New York; he still does alteration work and he still employs hundreds of men. There are not now any more jobs of the kind with which he began his successful contracting career, but since then he has carried into other branches of work the same principles and methods that made him successful at the start. He no longer has to compete in the matter of price. He is in big demand by the foremost real estate concerns in New York who know that he can handle a job efficiently and that his men will not needlessly annoy tenants or carelessly mess up the premises. Only recently he raised a five-story brick corner building two feet without any of the tenants moving out—without their even knowing that the work was anything more than some repairs in the basement.

The subject of standardization is discussed by our author in Chapters XIV-XVII. A reading of these chapters will show how standardization is essential to efficient management of a business. As applied

to materials and equipment, to symbols and routine, to labor and to rate-fixing, standardization goes far beyond the uses to which our young contractor put it in his repair business. It is an indispensable part of modern business administration.

> *In the efficiently managed business few things are impossible, while the other kind finds it increasingly difficult to hold its own.*

A Successful Manufacturer

Standardization in the modern manufacturing business has reached a state of perfection that would amaze one who was unfamiliar with such processes. People wonder how the Ford Motor Company can sell its product at such a low price. The reason is found in the application of the same principles that the young contractor applied—the principles discussed in the first four chapters of the present assignment. A few years ago the Ford Car was little more than a joke to the people of Detroit; they asked to have the "nuisance" stopped. Today the Ford plant in Detroit has over 40,000 employes, and the company is manufacturing cars at the rate of more than 500,000 a year. The local attitude toward Mr. Henry Ford and his car has undergone a marked change. There isn't a person in that city who doesn't regret having turned up his nose at the opportunity presented to him during the company's infancy of investing in the stock of that

concern. The story of the earnings of the Ford Company sounds like a fairy tale. But it is true.

It is not difficult to find a reason for the Ford success. All the essentials of a successful enterprise enumerated by Mr. Porter in his MODERN BUSINESS Lecture, "The Essentials of a Successful Enterprise," are noticeably present. The factory is a marvel of efficiency. There is not a vestige of useless red tape; hardly a single motion is lost. Every man has his appointed task to perform, and the conditions under which he works are such that he is almost forced to do his work efficiently. Any attempt at "soldiering" would quickly cause a congestion at his machine or bench and would create a tie-up in the department. Only the most improved machinery is to be found in the plant. Every operation is standardized.

As you watch the assembling of a motor or a chassis, you see in the large assembling room at one end of the factory, long rows of wooden horses. On these rest the frames for the chassis. Hundreds of cars are constantly on the floor at the same time. To each row a gang of men is assigned. The first man may place the motor in its proper position, the second may screw it on, the third man may lower the radiator from an overhead platform and put it in position, and so on. Each man has just one duty to perform. In about thirty-five minutes the car is assembled and ready to go out into the yard for testing.

There is really nothing complicated about this ap-

parently intricate procedure. Its value lies in its simplicity. Much may be learned about managing a body of men from a careful reading of the current assignment. Thus, Chapters XVIII to XX are devoted to wage systems and to the control of labor—its selection and training, as well as reward and promotion. These chapters answer many perplexing questions relating to the subject of labor efficiency.

Inefficient Management

In Chapter XXIII, under the head, "Savings in Time," reference is made to the manner of routing the work thru the plant. The conditions that exist in certain plants show plainly that not every manufacturer is as yet aware of the importance of that modern phase of management. Thus, in a certain foundry that was visited, a molder, whose pay is 40 cents an hour, was seen spending his time the first thing in the morning pulling jaggers out of a sand heap where they had been left by the night shift. Others were seen running thru the foundry in search of the foremen to give them their next job. Others again stood around waiting until the foremen could find time to assign work to them. Men were seen waiting as much as half an hour before they could get a flask at the flask yard. Some were filing for periods of fifteen minutes to half an hour at an ill-fitting core. If any of the men rebelled against this enforced loafing, they were promptly "called down" by the foremen, with the remark that they were not the only men in the shop and that the

others also must be attended to. In the same foundry a molder's helper was seen searching all over the foundry for chains with which to lift his castings, while another molder and his helper stood idle half an hour waiting for an opportunity to use a crane. The time wasted in looking for parts and in other unproductive and unnecessary labor, was enormous.

It is not easy to understand how a shop conducted in this manner can keep a-going. If under such circumstances it is possible to make even expenses, what an opportunity for profits with an efficient plan of management. Take a look at your own place of business. Ask yourself how much of the employes' time is wasted because conditions are not standardized; because no one knows just what his particular duties are; because no incentive is given the employe to do good work; because no one is on hand to check him up if he does poor work. Very likely you will find some leaks to be stopped, some unprofitable practices to be discontinued. In that case apply immediately the lessons of the present assignment.

Graphs in Management

In the chapter on "Statistics and Inspection as Sources of Administrative Information," the author discusses the value of statistics and the convenience of graphs as a source of information and as a means of determining future action. It is extremely interesting to note how concerns of world-wide reputation study efficiency in shop and office by means of

carefully prepared graphs and reports. Much of the inefficiency with which industrial plants are commonly charged may be traced to the absence of statistical material in such form as to be instantly availiable and readily understood.

There is in New York City a corporation whose president will scarcely look at a record unless it is in the form of a graph. Years ago his organization sustained heavy losses during a protracted period, and when eventually the leak was found, the president decided that henceforth he would have a system of records that would make a recurrence of the trouble impossible.

He now demands and receives from the accounting department each month a graph labeled "Gross Operating Income," which shows the total income during the last month in comparison with that of each of the preceding twelve months. Graphs are also prepared to show "Gross Operating Expense," and "Total Net Profits." Others again show in comparative arrangement the amount of income, expense, and profits in three territorial divisions.

When the president receives these graphs, he estimates in the light of previous records and present prospects what the coming month's income, expense and profit ought to be. Whenever his graph of gross operating income shows the last month's income to have fallen below the standard he set for it, the president goes to his territorial graph in search of the cause. Thereupon he is likely to dictate a letter to one of the district managers, offering some con-

structive criticism and suggesting what steps should be taken to bring the amount up to standard. Or, if the trouble is one that cannot so readily be found and remedied, the president is likely to jump right into the afflicted district and in cooperation with the district manager endeavor to bring the lagging territory back to standard.

In case the monthly standard appropriation for expenses has been exceeded, the graph brings the matter instantly to the president's attention. An investigation follows and proper remedies are promptly prescribed. Since this system was introduced, the company has made rapid and uniform progress. In describing this system and its advantages to his business, the president says:

> You see, we are simply trying to avoid being found in the plight of the man who locks his stable door only after his horse has been stolen. When you wait to learn from your annual balance sheet whether or not you have made any profits, you are denying yourself the opportunity of locking the door in case your profits are escaping. My monthly graphs keep me posted on the trend of things and I can step in quickly whenever it becomes necessary to impose a check.

Ex-president Brown of the New York Central Railroad once told a New England railway club how the use of graphic charts had saved the railroad $2,000,000.

Time Saving

The remaining chapters of our assignment are devoted by the author to various time-saving features adopted in modern organizations and to the

study of avoiding waste in the use of materials; also to the consideration of modern office methods based upon well-established principles of efficiency.

These chapters are of great practical usefulness to every student of business efficiency. The lessons they teach have been evolved from the ideas and experiments, the successes and failures of thousands of individuals and organizations.

The subject also has an individual application from which we should not try to escape. Are we using our time in the most economical manner? Are we planning our work—of whatever nature—in a way to accomplish the most in the shortest time and with the least effort?

This assignment establishes and emphasizes the truth of the following statement by the late F. W. Taylor, a well-known efficiency expert:

> *"That the first-class man can do in most cases from two to four times as much as is done on an average, is known to but few and is fully realized by those only who have made a thoro and scientific study of the possibilities of men."*

It is surely worth any man's while to seek, by a conservation of his energies and a proper direction of his activities to double and treble his productive power.

"The best evidence of ability is immense capacity for hard work and an intense conviction of its necessity."

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Modern business talks
Talk #8 (Developing productive power)

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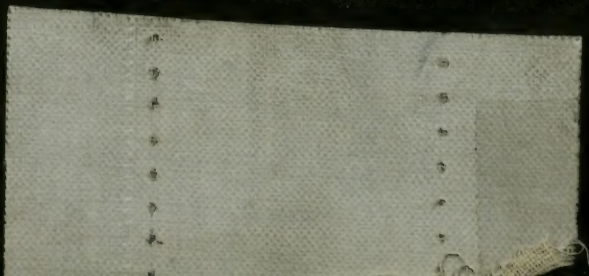

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